

REMARKS

Reconsideration and allowance of this application are respectfully requested. New claims 7-15 have been added. Claims 1-15 are now pending in the application. The rejections are respectfully submitted to be obviated in view of the remarks presented herein.

Objection to the Drawings

Figures 1 and 2 have been amended to add the legend of --Prior Art--.

Rejection Under 35 U.S.C. § 102(b) - Bradburn

Claims 1-6 have been rejected under 35 U.S.C. § 102(b) as allegedly being anticipated by Bradburn (EP 0915613 A1). The rejection is respectfully traversed.

An exemplary embodiment of the present invention relates to an internal-surface-scanning image recording apparatus for applying a light beam modulated with image information to a photosensitive medium mounted on a partly cylindrical inner circumferential surface of a support to record an image on the photosensitive medium. A light source outputs the light beam modulated with the image information. A plurality of exposure heads disposed on a circular surface at an angularly spaced interval guides the light beam outputted from the light source to the photosensitive medium. A switcher disposed between the light source and the exposure heads guides the light beam outputted from the light source to a selected one of the exposure heads which faces the photosensitive medium. The light beam can be guided selectively to the exposure heads to record an image on the photosensitive medium.

The disclosure of Bradburn does not anticipate the claimed invention. Bradburn discloses a double mirror imagesetter for exposing an image recording medium on a cylindrical drum (50) as shown in Figure 7. A laser (53) with a pair of imaging outputs (54 and 55) is controlled to selectively direct encoded radiation to a selected one of spinning mirrors (51 and 52) (paragraph [0022]). The spinning mirrors (51 and 52) are mounted at 180° to each other on a common shaft (45) which is rotated by a motor (46) on a carriage driven by a lead screw (47). An encoder (48) encodes the angular position of the shaft (45) to provide a series of pulses which are frequency multiplied by a desired frequency, to a control means (159) for controlling the laser (53). The laser (53) and control means (159) are shown more detail in Figure 9, in which a switch (83) is operated by microprocessor (78) to direct radiation along fibre-optic (56) for a first half of a revolution of the shaft (45), and along fibre-optic (58) for the second half of the revolution of the shaft (45) (paragraph [0026]).

However, there is no teaching in Bradburn of all the elements of Applicant's invention, as claimed. The Examiner cites to Bradburn's spinning mirrors (51 and 52) for teaching a plurality of exposure heads. However, the spinning mirrors (51 and 52) in Bradburn are not "disposed on a circular surface at an angularly spaced interval," as recited in claim 1. Bradburn's spinning mirrors (51 and 52) are mounted on a linear axis on a common shaft (45) which is rotated by a motor (46) on a carriage (paragraph [0022]). The mounting of the spinning mirrors (51 and 52) does not teach or suggest "an angularly spaced interval," because the spinning mirrors (51 and 52) are mounted in a linear direction on the common shaft (45). The axis upon which the spinning mirrors (51 and 52) spin extends through the common shaft (45), thus no **angular**

interval exists between the spinning mirrors (51 and 52). Furthermore, the spinning mirrors (51 and 52) are also not “disposed on a circular surface,” but are instead mounted on the common shaft (45). Although the Examiner contends that the spinning mirrors (51 and 52) are disposed on the drum (50), is it clearly shown in Figure 7 and discussed in paragraph [0022] that the spinning mirrors (51 and 52) are mounted on the common shaft (45) and not on any circular surface at an angularly spaced interval.

At least by virtue of the aforementioned differences, the claimed invention distinguishes over Bradburn. Claims 2-6 are dependent claims including all of the elements of independent claim 1, which, as established above, distinguishes over Bradburn. Therefore, claims 2-6 are patentable for at least the aforementioned reasons as well as for their additionally recited features. Reconsideration and withdrawal of the rejection under 35 U.S.C. § 102(b) are respectfully requested.

With further regards to claim 4, “said angularly spaced interval at which said exposure heads are disposed on the circular surface corresponds to an angle subtended by said partly cylindrical inner circumferential surface at a central axis thereof.” As discussed above, Bradburn does not teach or suggest that the spinning mirrors (51 and 52) are disposed on any circular surface. Furthermore, the spinning mirrors (51 and 52) in Bradburn are not disposed at an angularly spaced interval, because they are linearly mounted upon a common shaft (45) which only rotates upon its central axis, as shown in Figure 7 and described in paragraph [0022]. In addition, Bradburn further does not teach or suggest a partly cylindrical inner circumferential surface, because Bradburn’s drum (50) is a fully cylindrical object, as shown in Figure 7. At

least by virtue of these additional differences as well as the aforementioned reasons, the claimed invention distinguishes over Bradburn.

With further regards to claim 6, the internal-surface-scanning image recording apparatus further comprises “an optical fiber connected to said light source, wherein said switcher comprises a movable member for selectively connecting said optical fiber to said exposure heads.” Bradburn does not teach or suggest that the switch (83) comprises a movable member for selectively connecting said optical fiber to said exposure heads, as the Examiner contends. Paragraph [0026], which the Examiner has relied on for this teaching, merely discusses single-mode thermo-optic switch modules to be suitable for use as the switch (83) as shown in Figure 9. However, these single-mode thermo-optic switch modules fail to teach or suggest “a movable member for selectively connecting said optical fiber to said exposure heads,” as claimed. At least by virtue of these additional differences as well as the aforementioned reasons, the claimed invention distinguishes over Bradburn.

Newly Added Claims

Applicant has added new claims 7-15 to provide more varied protection for the present invention. Support for these claims is found in the specification on at least page 6, line 19 to page 7, line 2, page 8, line 25 to page 9, line 10, and page 12, line 1 to page 13, line 16, and in Figures 4 and 6. Claims 7-15 are allowable based on at least their dependencies, as well as for their additionally recited features.

That is, the cited reference does not teach or suggest: that “said movable member aligns said optical fiber connected to said light source with an optical fiber connected to a respective

one of said exposure heads,” as recited by claim 7; that “said switcher guides said light beam to a desired output waveguide by application of control voltages to said switcher,” as recited by claim 8; that “said circular surface has an axis of rotation coinciding with a central axis of said partly cylindrical inner circumferential surface,” as recited by claim 9; that “said light beam is guided to a selected one of said exposure heads which enters a recording range of the photosensitive medium,” as recited by claim 10; that “said light source, said plurality of exposure heads and said switcher are rotatable about a central axis of the partly cylindrical inner circumferential surface in a main scanning direction,” as recited by claim 11; that the internal-surface scanning image recording apparatus further comprises “an encoder which detects angular positions of said plurality of exposure heads, wherein said switcher is controlled by a detection result of said encoder,” as recited by claim 12; that “when one of said plurality of exposure heads first enters a recording range of said photosensitive medium, said switcher guides said light beam to said one of said plurality of exposure heads to record an image on said photosensitive medium, said switcher guiding said light beam to another one of said plurality of exposure heads to continue recording said image when said another one of said plurality of exposure heads enters the recording range of said photosensitive medium,” as recited by claims 13 and 14; and that “said plurality of exposure heads are disposed on a portion of the same circular surface,” as recited by claim 15.

Conclusion

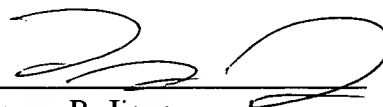
In view of the above, reconsideration and allowance of this application are now believed to be in order, and such actions are hereby solicited. If any points remain in issue which the

AMENDMENT UNDER 37 C.F.R. § 1.111
U.S. Application No. 09/973,812
Attorney Docket No. Q63764

Examiner feels may be best resolved through a personal or telephone interview, the Examiner is kindly requested to contact the undersigned at the telephone number listed below.

The USPTO is directed and authorized to charge all required fees, except for the Issue Fee and the Publication Fee, to Deposit Account No. 19-4880. Please also credit any overpayments to said Deposit Account.

Respectfully submitted,



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CUSTOMER NUMBER

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AMENDMENTS TO THE DRAWINGS

Figures 1 and 2 have been amended to add the legend of --Prior Art--.

Attachment: Two (2) Replacement Sheets (FIGS. 1 and 2)